

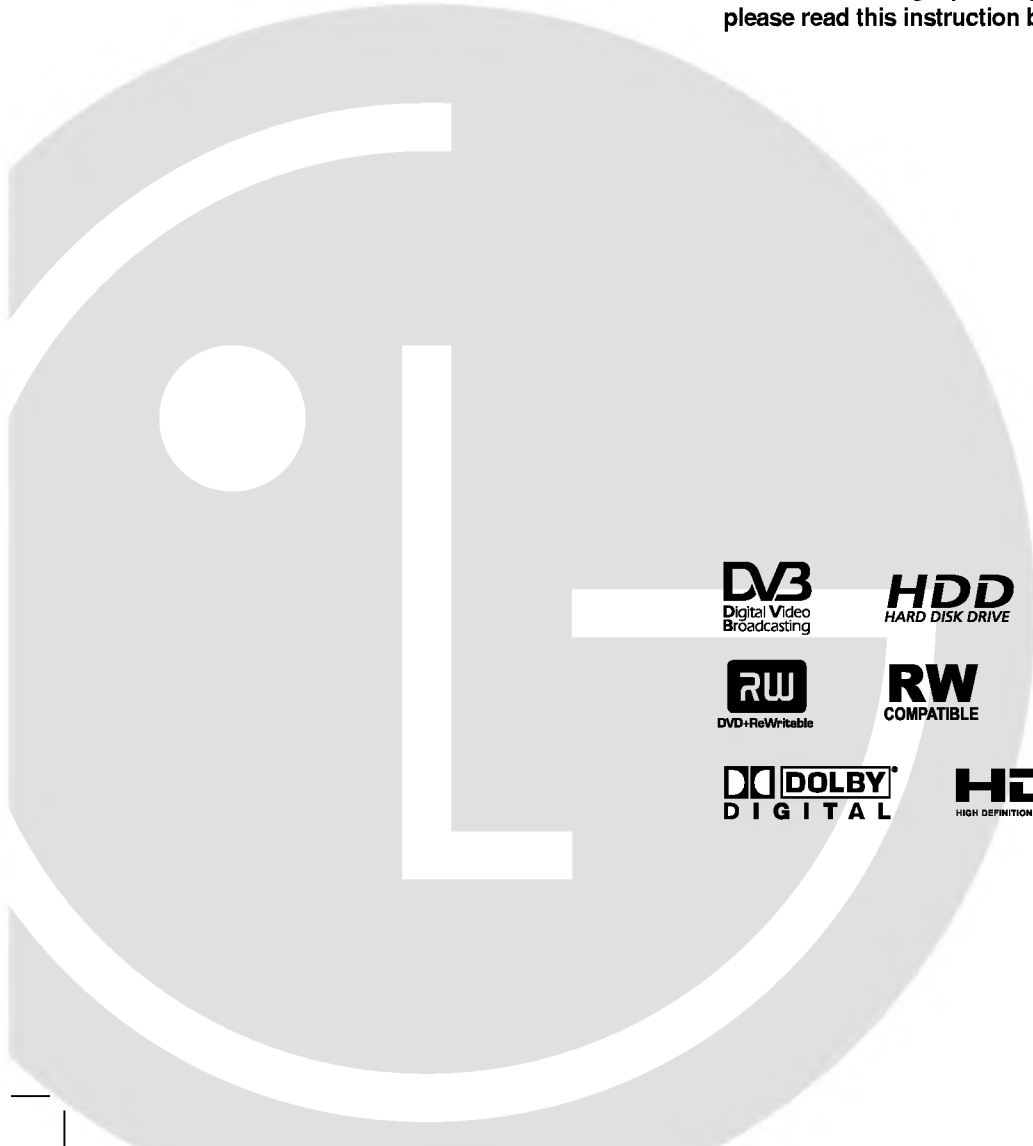


DVB-T HDD/DVD RECORDER

OWNER'S MANUAL

MODEL: RH2T80
RH2T160
RH2T250

Before connecting, operating or adjusting this product,
please read this instruction booklet carefully and completely.



The Clear Choice In Digital Video™



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

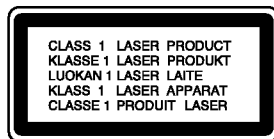
WARNING: Do not install this equipment in a confined space such as a book case or similar unit.

CAUTION:

Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from over heating.

The openings should be never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instruction have been adhered to.



CAUTION:

CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID DIRECT EYE EXPOSURE TO THE BEAM.

CAUTION:

This product employs a Laser System.

To ensure proper use of this product, please read this owner's manual carefully and retain it for future reference. Should the unit require maintenance, contact an authorized service centre.

Performing controls, adjustments, or carrying out procedures other than those specified herein may result in hazardous radiation exposure.

To prevent direct exposure to laser beam, do not try to open the enclosure. Visible laser radiation when open. DO NOT STARE INTO BEAM.

CAUTION: The apparatus should not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, should be placed on the apparatus.

CAUTION concerning the Power Cord

Most appliances recommend they be placed upon a dedicated circuit;

That is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain.

Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized service centre.

Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

To disconnect power from the mains, pull out the mains cord plug. When installing the product, ensure that the plug is easily accessible.

- The appliance is not intended for use by young children or infirm persons without supervision.
- Young Children should be supervised to ensure that they do not play with appliance.
- If the appliance is supplied from a cord extension set or an electrical portable outlet device, the cord extension set on electrical portable outlet device must be positioned so that it is not subject to splashing or ingress of moisture.

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Introduction

To ensure proper use of this product, please read this owner's manual carefully and retain for future reference.

This manual provides information on the operation and maintenance of your recorder. Should the unit require service, contact an authorized service location.

About the \emptyset Symbol Display

" \emptyset " may appear on your TV display during operation and indicates that the function explained in this owner's manual is not available on that specific media.

Symbol Used in this Manual

Note:

Indicates special notes and operating features.

Tip:

Indicates tips and hints for making the task easier.

A section whose title has one of the following symbols are applicable only to the disc represented by the symbol.

HDD Titles recorded on the HDD
DVD ALL All DVD discs listed below.

RAM DVD-RAM disc
-RW_{VR} DVD-RW with VR recording mode
-RW_{Video} DVD-RW with Video recording mode
+RW DVD+RW disc
-R DVD-R disc
+R DVD+R (DL) disc
DVD DVD-Video disc

VCD Video CDs
ACD Audio CDs
DivX DivX files
MP3 MP3 files
WMA WMA files
JPEG JPEG files

Notes on Discs

Handling Discs

Do not touch the playback side of the disc. Hold the disc by the edges so that fingerprints do not get on the surface. Never stick paper or tape on the disc.

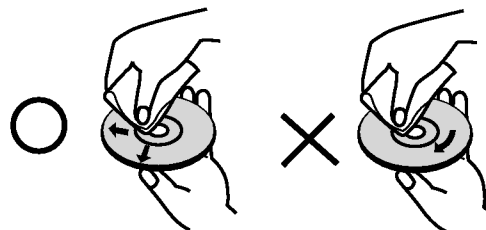


Storing Discs

After playing, store the disc in its case. Do not expose the disc to direct sunlight or sources of heat and never leave it in a parked car exposed to direct sunlight.

Cleaning Discs

Fingerprints and dust on the disc can cause poor picture quality and sound distortion. Before playing, clean the disc with a clean cloth. Wipe the disc from the centre out.



Do not use strong solvents such as alcohol, benzene, thinner, commercially available cleaners, or anti-static spray intended for older vinyl records.

Moisture Condensation

Never operate this product immediately after moving it from a cold location to a warm location. Leave it for two or three hours without operating it. If you use this product in such a situation, it may damage discs and internal parts.



What is SIMPLINK?

Some functions of this unit are controlled by TV's remote control when this unit and LG TV with SIMPLINK are connected through HDMI connection.

- Controllable functions by LG TV's remote control; Play, Pause, Scan, Skip, Stop, Power Off, etc.
- Refer to the TV owner's manual for the details of SIMPLINK function.
- LG TV with SIMPLINK function has the logo as shown above.

Recordable and Playable Discs



DVD-RW (Digital Video Disc - ReWritable):

- DVD-RW discs can be formatted for VR mode recording or Video mode recording.
- These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.

[VR mode]

- Recordings can be extensively edited
- Playable only on VR mode compatible players (after finalization)

[Video mode]

- Playable on regular DVD players (after finalization)
- Limited editing features



DVD-R (Digital Video Disc - Recordable)

- These Discs can be recorded only once. After you finalize a DVD-R, you cannot record on it or edit it.
- DVD-R discs can be only formatted to Video mode.
- Playable on regular DVD players (after finalization)
- Limited editing features



DVD-RAM (DVD - Random Access Memory)

- DVD-RAM discs can be formatted for VR mode recording.
- These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.
- Playable on DVD-RAM compatible players.
- Recordings can be extensively edited.
- Only DVD-RAM standard Version 2.0, 2.1 and 2.2 discs can be used in this unit.
- You cannot use the cartridge-type DVD-RAM disc in this unit.



DVD+ReWritable

DVD+RW (Digital Video Disc + ReWritable)

- These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.
- Playable on DVD+RW compatible players (automatically finalization)
- The edited contents are playable on DVD+RW compatible players only after finalization
- Recordings can be edited the title/chapter



DVD+R

DVD+R (Digital Video Disc + Recordable)

- These Discs can be recorded only once. After you finalize a DVD+R, you cannot record on it or edit it any more.
- Playable on DVD+R compatible players (after finalization)
- Any edited contents are not be compatible on DVD+R compatible players. (Hide, chapter combine, added chapter mark, etc.)
- Limited title/chapter editing features.



DVD+R DL

DVD+R DL (Digital Video Disc + Recordable; Double Layer)

- These Discs can be recorded only once. After you finalize a DVD+R DL, you cannot record on it or edit it any more.
- Storage space is nearly doubled with double layer DVD+R media, allowing consumers to record up to 8.5GB of video on a single DVD+R disc.
- Playable on DVD+R DL compatible players (after finalization)
- Any edited contents are not be compatible on DVD+R DL compatible players. (Hide, chapter combine, added chapter mark, etc.)
- Limited title/chapter editing features.

Recommended recordable DVD discs

DVD-R	DVD+R	DVD-RW	DVD+RW	DVD+R(DL)	DVD-RAM
Mitsubishi (8x, 16x)	Mitsubishi (8x, 16x)	Mitsubishi (4x)	Mitsubishi (4x)	Mitsubishi (2.4x)	Fujifilm (2x)
That's (8x, 16x)	Ricoh (8x, 16x)	Verbatim (4x)	SONY (2.4x)	Maxell (2.4x)	Mitsubishi (3x)
SONY (16x)	SONY (16x)	JVC (4x)	Verbatim (2.4x)	-	-
-	-	Victor (4x)	Ricoh (2.4x, 4x)	-	-
-	-	Maxell (4x)	-	-	-

Note: If a DVD-RW/DVD+RW discs is recorded using a personal computer or other DVD recorder, you cannot format the disc using this recorder. So if you want to use the disc on this recorder, you must format the disc using the original recorder.

Playable Discs



DVD (8 cm / 12 cm disc)

Discs such as movies that can be purchased or rented



Video CD (VCD) (8 cm / 12 cm disc)

VIDEO CDs or CD-Rs/CD-RWs in VIDEO CD/Super VIDEO CD format



Audio CD (8 cm / 12 cm disc)

Music CDs or CD-Rs/CD-RWs in music CD format that can be purchased



CD-R/CD-RW (8 cm / 12 cm disc)

CD-R/CD-RW discs that contain audio titles, DivX, MP3, WMA, or JPEG files.

Notes:

- Depending on the conditions of the recording equipment or the CD-R/RW (or DVD±R/RW) disc itself, some CD-R/RW (or DVD±R/RW) discs cannot be played on the unit.
- Do not attach any seal or label to either side (the labelled side or the recorded side) of a disc.
- Do not use irregularly shaped CDs (e.g., heart-shaped or octagonal). Doing so may result in malfunctions.
- Depending on the recording software & the finalization, some recorded discs (CD-R/RW or DVD±R/RW) may not be playable.
- DVD-R/RW, DVD+R/RW and CD-R/RW discs recorded using a personal computer or a DVD or CD Recorder may not play if the disc is damaged or dirty, or if there is dirt or condensation on the Recorder's lens.
- If you record a disc using a personal computer, even if it is recorded in a compatible format, there are cases in which it may not play because of the settings of the application software used to create the disc. (Check with the software publisher for more detailed information.)
- This recorder requires discs and recordings to meet certain technical standards in order to achieve optimal playback quality. Pre-recorded DVDs are automatically set to these standards. There are many different types of recordable disc formats (including CD-R containing MP3 or WMA files) and these require certain pre-existing conditions (see above) to ensure compatible playback.
- Customers should note that permission is required in order to download MP3 / WMA files and music from the Internet. Our company has no right to grant such permission. Permission should always be sought from the copyright owner.

Regional Code

This unit has a regional code printed on the rear of the unit. This unit can play only DVD discs labelled same as the rear of the unit or "ALL".

Notes on Regional Codes

- Most DVD discs have a globe with one or more numbers in it clearly visible on the cover. This number must match your unit's regional code or the disc cannot play.
- If you try to play a DVD with a different regional code from the unit, the message "Incorrect region code. Can't play back" appears on the TV screen.

Availability of copying or moving feature

From	To	MP3/WMA	JPEG	DivX	Audio CD	Video CD	Title* ¹
HDD	DISC	No	No	No	No	No	Yes
DISC	HDD	Yes	Yes	Yes	No	No	Yes

*1 The title is recorded from this unit.

About the internal hard disk drive

The internal hard disk drive (HDD) is a fragile piece of equipment. Please use the recorder following the guidelines below to protect against possible HDD failure.

We recommend that you back up your important recordings onto DVD discs in order to protect against accidental loss.

- Do not move the recorder while it is on.
- Install and use the recorder on a stable, level surface.
- Do not block the rear vent/cooling fan.
- Do not use the recorder in excessively hot or humid places, or in places that may be subject to sudden changes in temperature. Sudden changes in temperature can cause condensation to form inside the recorder. This can be a cause of HDD failure.
- While the recorder is switched on, do not unplug from the wall socket or switch the electricity off from the breaker switch.
- Do not move the recorder immediately after switching it off. If you need to move the recorder, please follow the steps below:
 1. After the message POWER OFF is shown in the display, wait at least two minutes.
 2. Unplug from the wall socket.
 3. Move the recorder.
- If there's a power failure while the recorder is on there is a chance that some data on the HDD will be lost.
- The HDD is very delicate. If used improperly or in an unsuitable environment, it is possible that the HDD will fail after a few years of use. Signs of problems include playback unexpectedly freezing and noticeable block noise (mosaic) in the picture. However, sometimes there will be no warning signs of HDD failure.

If the HDD fails, no playback of recorded material will be possible. In this case it will be necessary to replace the HDD unit.

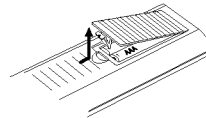
Remote Control Operation

Point the Remote Control at the remote sensor and press the buttons.

Caution

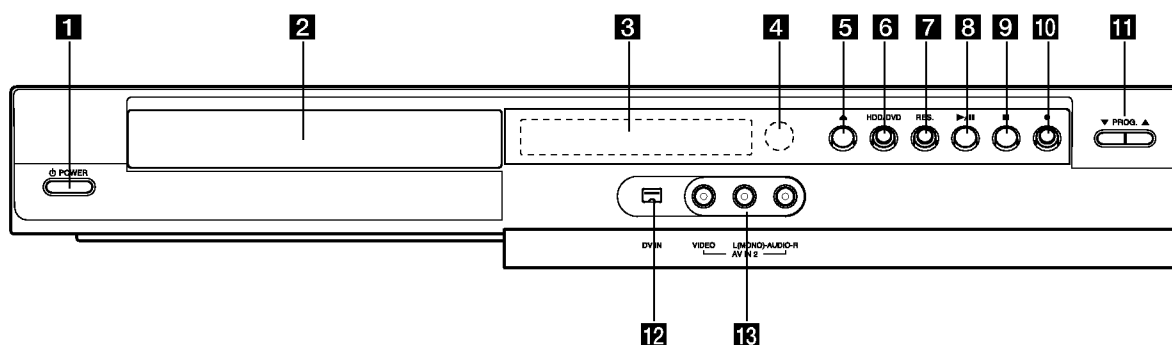
Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.).

Remote Control Battery Installation



Remove the battery cover on the rear of the Remote Control, and insert two R03 (size AAA) batteries with **+** and **-** matched correctly.

Front Panel



1 POWER

Switches the recorder ON or OFF.

2 Disc Tray

Insert a disc here.

3 Display window

Shows the current status of the recorder.

T/S: Indicates the timeshifting mode.

REC: The recorder is recording.

HDD: The recorder is HDD mode.

DVD: The recorder is DVD mode.

HDD ◀▶ DVD: The recorder is dubbing.

⊙ : Indicates when the recorder is in timer recording or a timer recording is programmed.

⏱ : Indicates clock, total playing time, elapsed time, title number, chapter/track number, channel, etc.

4 Remote Sensor

Point the recorder remote control here.

5 ▲ (OPEN/CLOSE)

Opens or closes the disc tray.

6 HDD/DVD

Set the recorder's mode to HDD or DVD.

7 RESOLUTION

Sets the output resolution for HDMI and COMPONENT OUTPUT jacks.

- HDMI: 576i, 576p, 720p, 1080i

- COMPONENT: 576i, 576p

8 ▶ / ⏸ (PLAY / PAUSE)

Starts playback.

Pause playback or recording temporarily, press again to exit pause mode.

9 ■ (STOP)

Stops playback or recording.

10 ● (REC)

Starts recording. Press repeatedly to set the recording time.

11 PROG. (▼/▲)

Scans up or down through memorized channels.

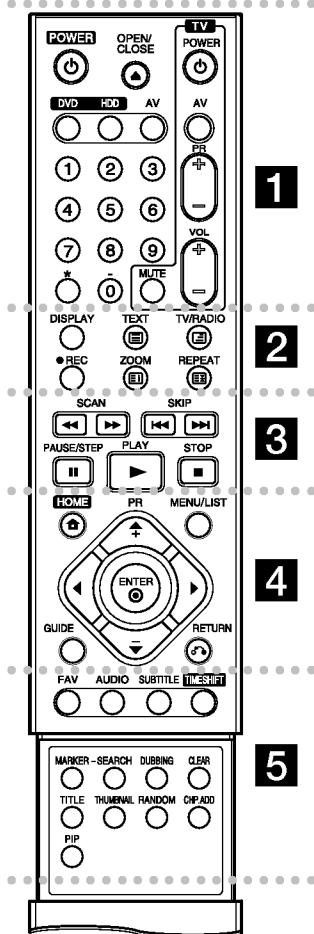
12 DV IN

Connect the DV output of a digital camcorder.

13 AV IN 2 (VIDEO IN/AUDIO IN (Left/Right))

Connect the audio/video output of an external source (Audio system, TV/ Monitor, VCR, Camcorder, etc.).

Remote Control



- • • • • **1** • • • • •
POWER: Switches the recorder ON or OFF.
- OPEN/CLOSE (▲):** Opens and closes the disc tray.
- DVD:** Selects the unit's function mode to DVD.
- HDD:** Selects the unit's function mode to HDD.
- AV:** Changes the input to use for recording (Tuner, AV1-2, or DV IN).
- 0-9 numerical buttons:** Selects numbered options in a menu.
- TV Control Buttons:** See page 62.

- • • • • **2** • • • • •
DISPLAY: Accesses On-Screen Display.
- REC (●):** Starts recording.
- ZOOM:** Enlarges video image.
- REPEAT:** Repeat chapter, track, title, all.
- TV/RADIO:** Switches between TV and Radio modes.

Teletext Buttons

- **INDEX (☐):** Moves to Index screen. If Index page is not present, moves to page 100.
- **TEXT (☐):** Switches between teletext mode and normal TV viewing.
- **FREEZE (☐):** Holds the teletext display and stops the automatic page change in the teletext mode.
- **MIX (☐):** Selects the background for teletext screen (Opaque, User Transparency, Transparency).

• • • • • 3 • • • • •

- SCAN (◀◀ / ▶▶):** Search backward or forward.
- SKIP (◀◀◀ / ▶▶▶):** Go to next or previous chapter or track.
- PAUSE/STEP (⏸):** Pause playback or recording temporarily.
- PLAY (▶):** Starts playback.
- STOP (■):** Stops playback or recording.

• • • • • 4 • • • • •

- HOME:** Accesses or removes the HOME menu.
- MENU/LIST:** Accesses menu on a DVD disc. Switches between Title List-Original and Title List-Playlist menu.
- ◀ / ▶ / ▲ / ▼ (left/right/up/down):** Selects an option in the menu.
- ENTER (⊙):** Acknowledges menu selection.
- PR (+/-):** Scans up or down through memorized channels.

GUIDE: Displays the Program Guide.

RETURN (↶): Removes the menu.

• • • • • 5 • • • • •

FAV: Changes to the favourite program.

AUDIO: Selects an audio language or audio channel.

SUBTITLE: Selects a subtitle language.

TIMESHIFT: Activates pause live TV/playback (timeshift) for a live TV program.

MARKER: Marks any point during playback.

SEARCH: Displays Marker Search menu.

DUBBING: Copies DVD to HDD (or HDD to DVD).

CLEAR: Removes a track number on the Program List or a mark on the Marker Search menu.

TITLE: Displays the disc's Title menu, if available.

THUMBNAIL: Selects a thumbnail picture.

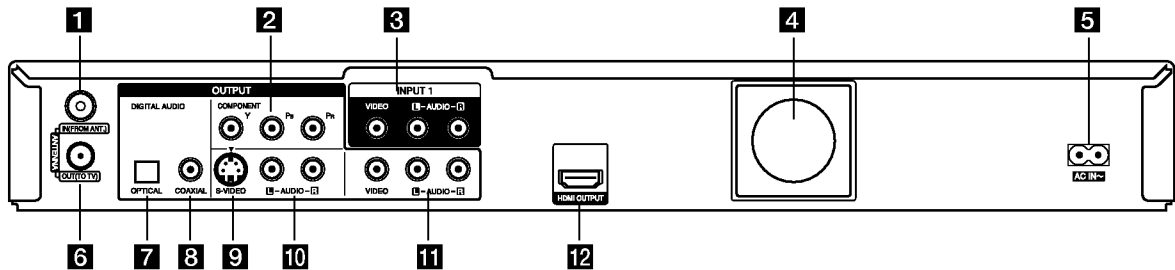
RANDOM: Plays tracks in random order.

CHP. ADD: Inserts a chapter marker when playing.

PIP: Selects PIP function on or off.

Hook-up and Settings

Rear Panel



- 1 ANTENNA IN**
Connect the antenna to this terminal.
- 2 COMPONENT OUTPUT (Y Pb Pr)**
Connect to a TV with Y Pb Pr inputs.
- 3 INPUT 1 (VIDEO IN/AUDIO IN (Left/Right))**
Connect the audio/video output of an external source (Audio system, TV/ Monitor, VCR, Camcorder, etc.).
- 4 Cooling fan**
- 5 AC IN ~**
Plug into the power source.
- 6 ANTENNA OUT**
Passes the signal from the ANTENNA IN to your TV/monitor
- 7 OPTICAL (Digital audio out jack)**
Connect to digital (optical) audio equipment.
- 8 COAXIAL (Digital audio out jack)**
Connect to digital (coaxial) audio equipment.
- 9 S-VIDEO OUTPUT**
Connect to a S-Video Input on TV.
- 10 AUDIO OUTPUT (Left/Right)**
Connect to a TV with audio inputs.
- 11 VIDEO / AUDIO OUTPUT (Left/Right)**
Connect to a TV with video/audio inputs.
- 12 HDMI Connector (Type A)**
HDMI output providing a high quality interface for digital audio and video.

General about connection

Picture and sound

Digital TV is a transmission technology that replaces the traditional analogue technique.

This means that several TV channels, radio channels and other digital services can be transmitted on the same space as just one channel took up before. As a consumer you get access to many more channels and services than before at the same time as they are received with perfect picture and audio quality.

The recorder converts the digital signal into a format that is suitable for your TV and sound system.

Connecting your recorder is just as simple as connecting for example a video recorder. You get the best picture quality by using a HDMI cable for connection to your TV-set. The best audio experience is obtained by connecting an optical cable to your sound system.

Coverage

Before buying this product it is anticipated that you have made sure that there are digital transmissions covering your region.

Antenna / Signal source

Depending on the reception your recorder may be connected to a simple indoor antenna or to an existing outdoor antenna system. If you live in a flat you should make sure that the digital terrestrial signals are distributed to your wall antenna outlet. If you have your own antenna system you must make sure that it is equipped with antennas, filter and/or amplifier that can handle those frequencies that the digital channels are transmitted on.

Cable-TV

Please observe that this recorder is not designed for the reception of regular digital cable-TV signals (QAM-signal). Despite this, operators of smaller cable networks may have chosen to distribute the digital terrestrial signals (COFDM-signal) in the network. In this case this recorder may well be used.

Check with your landlord if you are insecure about what type of TV-signal that is provided in the wall antenna outlet.

Connecting to the antenna

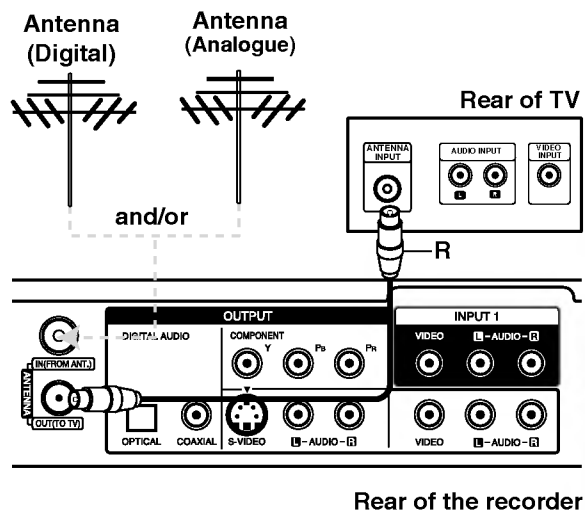
Remove the antenna cable plug from your TV set and insert it into the antenna socket at the back of the recorder. Plug one end of the antenna cable into the TV socket on the recorder and the other end into the antenna input socket on your TV set.

Caution

The ANTENNA IN jack supply the antenna feed (DC 5V/100mA) and the antenna feed is switch able via setup menu. If your digital antenna is not an active antenna, you must set the [Antenna feed 5V] option to [OFF].

RF coaxial connection

Connect the ANTENNA OUT jack on the recorder to the antenna input jack on the TV using the 75-ohm Coaxial Cable supplied (R). The ANTENNA OUT jack passes the signal through from the ANTENNA IN jack.



Connections to Your TV

Make one of the following connections, depending on the capabilities of your existing equipment.

Tips

- Depending on your TV and other equipment you wish to connect, there are various ways you could connect the recorder. Use only one of the connections described below.
- Please refer to the manuals of your TV, VCR, Stereo System or other devices as necessary to make the best connections.

Caution

- Make sure the recorder is connected directly to the TV. Tune the TV to the correct video input channel.
- Do not connect the recorder's AUDIO OUTPUT jack to the phono in jack (record deck) of your audio system.
- Do not connect your recorder via your VCR. The DVD image could be distorted by the copy protection system.

Video connection

Connect the VIDEO OUT jack on the recorder to the video in jack on the TV using the video cable (**V**).

S-Video connection

Connect the S-VIDEO OUTPUT jack on the recorder to the S-Video in jack on the TV using the S-Video cable (**S**).

Audio (Left/Right) Connection

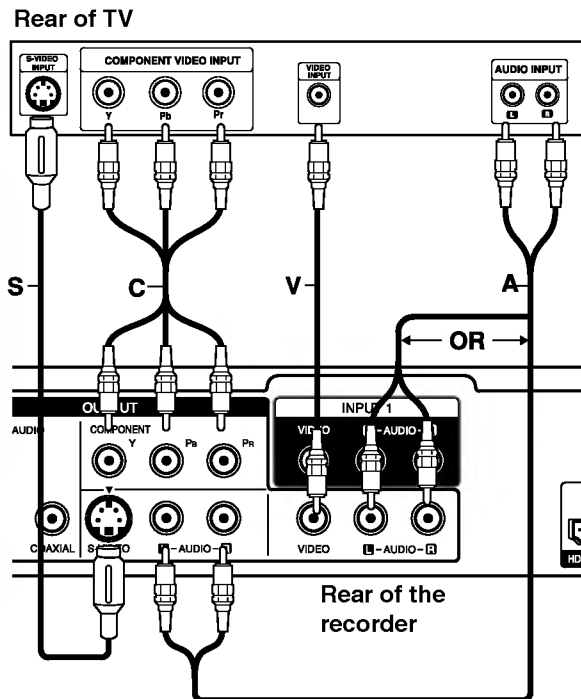
Connect the left and right AUDIO OUTPUT jacks of the recorder to the audio left and right IN jacks on the TV using the audio cables (**A**). Do not connect the recorder's AUDIO OUTPUT jack to the phono in jack (record deck) of your audio system.

Component Video connection

Connect the COMPONENT OUTPUT jacks on the recorder to the corresponding input jacks on the TV using an Y P_B P_R cable (**C**).

If your television is a high-definition or "digital ready" television, you may take advantage of the recorder's progressive scan output for the highest video resolution possible. If your TV does not accept the Progressive Scan format, the picture will appear scrambled if you try Progressive Scan on the recorder.

- Set the resolution to 576p for progressive signal using RES. button on the front panel.



Note:

Progressive scan does not work with the analogue video connections (VIDEO OUTPUT and S-VIDEO OUTPUT jacks).

Caution:

If the resolution is set to 720p or 1080i, the VIDEO OUTPUT, S-VIDEO OUTPUT and COMPONENT OUTPUT connections are not available.

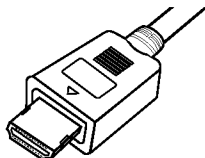
HDMI connection

If you have an HDMI TV or monitor, you can connect it to this recorder using an HDMI cable.

1. Connect the HDMI OUTPUT jack on the recorder to the HDMI INPUT jack on a HDMI compatible TV or monitor (**H**).
2. Set the TV's source to HDMI (refer to TV's Owner's manual).

Notes:

- If your TV is NOT capable of handling 96 kHz sampling frequency, set the [Sampling Freq.] option to [48 kHz] on the setup menu (See page 21). When this choice is made, this unit will automatically convert any 96 kHz signals to 48 kHz so your system can decode them.
- If your TV is not equipped with Dolby Digital and MPEG decoder, set the [Dolby Digital] and [MPEG] options to [PCM] on the setup menu (See page 21).
- If your TV is not equipped with DTS decoder, set the [DTS] options to [OFF] on the setup menu (See page 21). To enjoy DTS multi channel surround, you must connect this recorder to a DTS compatible receiver via one of this recorder's digital audio outputs.
- The arrow on the cable connector body should face up for correct alignment with the connector on the recorder.



(Type A)

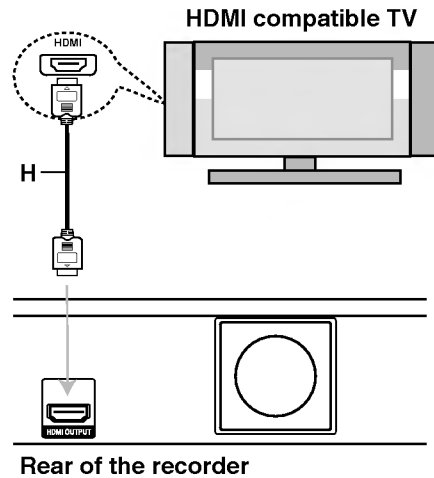
- If there is noise or lines on the screen, please check the HDMI cable.

Tip :

When you use the HDMI connection, you can change the resolution (576i, 576p, 720p, or 1080i) for the HDMI output using RES. button on the front panel.

Caution:

Changing the resolution when the recorder is connected with HDMI connector may result in malfunctions. To solve the problem, turn off the recorder and then turn it on again.



About HDMI

HDMI (High Definition Multimedia Interface) supports both video and audio on a single digital connection for use with DVD Players, Set-Top Boxes, and other AV devices.

HDMI was developed to provide the technologies of HDCP (High Definition Contents Protection). HDCP is used to protect digital content transmitted and received.

HDMI has the capability to support standard, enhanced, or high-definition video plus standard to multi-channel surround-sound audio, HDMI features include uncompressed digital video, a bandwidth of up to 5 gigabytes per second, one connector (instead of several cables and connectors), and communication between the AV source and AV devices such as DTVs.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

Additional Information for HDMI

- When you connect an HDMI or DVI compatible device make sure of the followings:
 - Try switching off the HDMI/DVI device and this recorder. Next, switch on the HDMI/DVI device and leave it for around 30 seconds, then switch on this recorder.
 - The connected device's video input is set correctly for this unit.
 - The connected device is compatible with 720(1440)x576i, 720x576p, 1280x720p, or 1920x1080i video input.
- Not all HDCP-compatible DVI devices will work with this recorder.
 - The picture will not be displayed properly with non-HDCP device.

Connecting to an Amplifier

Connecting to an amplifier equipped with two channel analogue stereo or Dolby Pro Logic II/Pro Logic

Connect the Left and Right AUDIO OUTPUT jacks on the recorder to the audio left and right in jacks on your amplifier, receiver, or stereo system, using the audio cables (A).

Connecting to an amplifier equipped with two channel digital stereo (PCM) or to an Audio/Video receiver equipped with a multi-channel decoder (Dolby Digital™, MPEG 2, or DTS)

1. Connect one of the recorder's DIGITAL AUDIO OUTPUT jacks (OPTICAL O or COAXIAL X) to the corresponding in jack on your amplifier. Use an optional digital (optical O or coaxial X) audio cable.
2. You will need to activate the recorder's digital output. (See "Audio Settings" on page 21).

Digital Multi-channel sound

A digital multi-channel connection provides the best sound quality. For this you need a multi-channel Audio/Video receiver that supports one or more of the audio formats supported by your recorder (MPEG 2, Dolby Digital and DTS). Check the receiver manual and the logos on the front of the receiver.

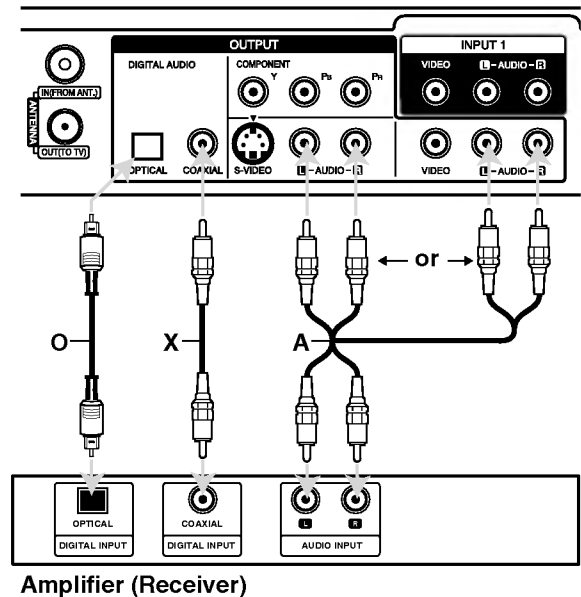
Caution:

Due to the DTS Licensing agreement, the digital output will be in DTS digital out when DTS audio stream is selected.

Notes:

- If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all.
- Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.
- To see the audio format of the current DVD in the on-screen display, press AUDIO.
- This recorder does not perform internal (2 channel) decoding of a DTS sound track. To enjoy DTS multi channel surround, you must connect this recorder to a DTS compatible receiver via one of this recorder's digital audio outputs.

Rear of the recorder



Amplifier (Receiver)

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

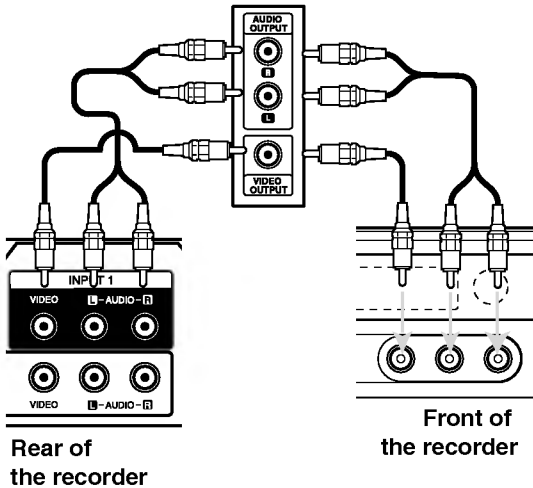
"DTS" and "DTS Digital Out" are trademarks of Digital Theatre Systems, Inc.

Accessory Audio/Video (A/V) Connections

Connecting to the AV IN 1 or AV IN 2 Jacks

Connect the input jacks (AV IN 1, AV IN 2) on the recorder to the audio/video out jacks on your accessory component, using audio/video cables.

Jack panel of Accessory Component (VCR, Camcorder, etc.)



Connecting a Digital Camcorder

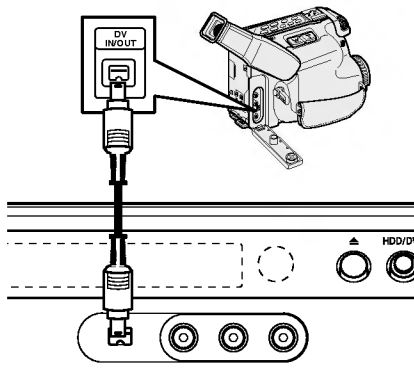
Using the front panel DV IN jack, it is possible to connect a DV digital camcorder and digitally transfer DV tapes to DVD.

Use a DV cable (not supplied) to connect the DV in/out jack of your DV camcorder to the front panel DV IN jack of this recorder.

Notes:

- This jack is for connection to DV digital camcorder only. It is not compatible with digital satellite tuners or D-VHS video decks.
- Disconnecting the DV cable while recording a contents of the connected digital camcorder may result in malfunction.

DV Digital Camcorder



Front of the recorder

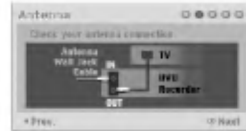
Auto Setup

After the POWER is pressed for the first time to turn on the unit or resetting the unit, the Initial Setup Wizard function sets the language, clock and tuner channels automatically.

1. Select a language for the Setup menu and on-screen display. Use ▲ / ▼ to select a language then press ENTER.



2. Please check your antenna connections. Press ENTER to move next step.

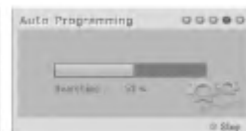


3. Use ▲ / ▼ to select the Clock Set option then press ENTER.



- [Auto]: When Channel auto search is completed the actual Time and Date are also set automatically. (See "Auto Clock Set" on page 19.)
- [Manual]: Enter the necessary information for date and time.
 - ◀ / ▶ (left/right): Moves the cursor to the previous or next column.
 - ▲ / ▼ (up/down): Changes the setting at the current cursor position.

4. Press ENTER while [Start] option is selected. The tuner will automatically cycle through all available channels in the area and place them in the tuner's memory. You can skip the analogue channel scanning by pressing ▶.



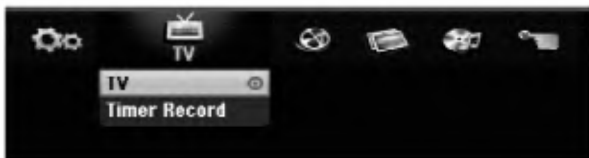
5. Press ENTER to finish the setup.



Using the Home Menu

From the Home Menu screen you can access all the Media for playback and recording of the recorder.

1. Press HOME to display the Home Menu screen.
2. Use the ◀ / ▶ buttons to select a main option you want. Sub options appears.
3. Use the ▲ / ▼ and ENTER buttons to select the sub option you want.



4. To exit the HOME menu, press HOME or RETURN (↵).

TV

- **TV:** Returns to live TV viewing.
- **Timer Record:** Displays [Timer Record List] menu. (See page 44)

MOVIE

- **HDD:** Displays the Title List menu for HDD. (page 49)
- **HDD DivX:** Displays the [Movie List] menu for HDD. (page 34)
- **DISC:**
 - Displays Title List menu for recordable disc (page 49)
 - Displays [Movie List] menu for DivX disc. (page 34)
 - Plays Video CD or DVD-Video disc (page 30-33).

PHOTO (See page 37)

- **HDD:** Displays [Photo List] menu for HDD.
- **DISC:** Displays [Photo List] menu for disc.

MUSIC (See page 35)

- **HDD:** Displays [Music List] menu for HDD.
- **DISC:** Displays [Music List] (or Audio CD) menu for disc.

SPECIAL

- **Rec Mode:** Displays the menu to select the record mode. (See page 23)

SETUP (See page 16)

- **Start:** Displays Setup menu.

Initial Settings

In this menu system, there are several ways to customize the settings provided. Most menus consist of three levels to set up the options, but some require greater depth for the variety of settings.

General Operation

1. Press HOME and select [Setup] option.
2. Select [Start] option then press ENTER. The Setup menu appears.



3. Use ▲ / ▼ to select the desired option.
4. While the desired item is selected, press ▶ to move to the second level.
5. Use ▲ / ▼ to select the second desired option.
6. Press ▶ to move to the third level.
7. Use ▲ / ▼ to select the desired setting then press ENTER to confirm your selection. Some items require additional steps.
8. Press RETURN (↵) repeatedly to exit the Setup menu.

Note:

Press ◀ to go back to the previous level.

General Settings

Auto Programming

This recorder is equipped with a frequency synthesized tuner capable of receiving up to 88 analogue channels and 500 digital channels.

Preparation:

Connect the recorder to the desired type of antenna, as shown in Connecting to the Antenna on page 11.

Note:

Password is needed to access the [Auto Programming] option if [Lock System] option is set to [On].



1. Select the [Auto Programming] option.
2. Press ► to move to the third level. [Start] option is highlighted.
3. Press ENTER to begin the channel search. The tuner will automatically cycle through all available channels in the area and place them in the tuner's memory. You can skip the analogue channel scanning by pressing ►.

Note:

If you skip the Auto Setup menu and access the Setup menu for the first time, you can only set the [Auto Programming] option. You can set the other options after finishing [Auto Programming].

Manual Channel Add

This feature manually adds channels.

Note:

Password is needed to access the [Add Channel] option if [Lock System] option is set to [On].

1. Select the [Program Edit] option then press ►.
2. Use ▲ / ▼ to select the [Add Channel] option then press ENTER.



3. Use ▲ / ▼ to select [Analogue] for analogue channel or [Digital] for digital channel then press ►.
4. Use ▲ / ▼ to select a channel number. Searches for a channel automatically. Searching stops when the recorder tunes in a channel.
5. Press ENTER to add the channel.

Program Edit

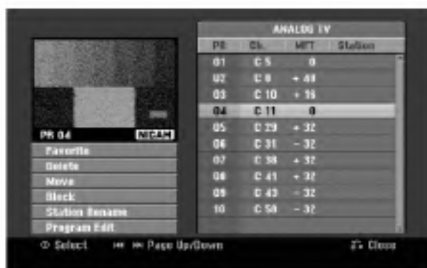
You can edit a channel manually (name, move, etc.).

Note:

Password is needed to access the [Program Edit] option if [Lock System] option is set to [On].

1. Select the [Program Edit] option then press **▶**.
2. Use **▲ / ▼** to select the [Edit] option then press ENTER.

The Program List menu appears.



3. Use **▲ / ▼** to select a PR number then press ENTER.
4. Use **▲ / ▼** to select the program option then press ENTER.

- [Favourite] Set the program to favourite channel.
- [Delete] Disables a program position you do not need.
- [Move] (Analogue channel only) Sorts the program positions on the Program List.
- [Block] Blocks the program.
- [Station Rename] Changes the station name. The display for entering characters appears. To enter characters, see page 53.

Note: The station name may be changed automatically according to the program information that is supplied by broadcaster.

- [Program Edit] (Analogue channel only) Sets the analogue channel manually.
5. Press RETURN (**↵**) repeatedly to exit Program List menu.

Switching the program list to DIGITAL TV, ANALOG TV, or RADIO

1. Press **▲** to move the highlight position to top of the program list.
2. Press **◀ / ▶** to select a [DIGITAL TV], [ANALOG TV], or [RADIO] then press ENTER. Selected program list appears.

Setting a favourite program

You can set a program to favourite channel with genre.

1. Press **▲ / ▼** to select a program then press ENTER.
2. Press **▲ / ▼** to select [Favourite] option then press ENTER. The genre choice menu will appear.



3. Select a genre then press ENTER. The program is set to the favourite program with genre.

Tip:

You can modify User 1 and User 2 genre. Select User 1 or User 2 then press red colour button.

The display for entering characters appears. To enter characters, see page 53.

Program Edit (Continued)

Program Edit

You can perform a search to select and store TV channels manually.

When you select [Program Edit] in step 4 on the previous page, the display for setting channels appears.

1. Use ◀ / ▶ to select the item and press ▲ / ▼ to change the setting.



- [PR] indicates the selected program position.
 - [Seek] Searches for a channel automatically. Searching stops when the recorder tunes in a channel.
 - [Ch.] Changes the channel number.
 - [MFT] Fine tunes the channel to obtain a clearer picture.
 - [NICAM] Sets the channels for the NICAM broadcast. Normally, [NICAM] is set to [ON]. If the sound from NICAM broadcast is not clear, set to [OFF].
2. Choose OK then press ENTER to confirm the setting and returns to the Program List menu.

Auto Clock Set

When Channel auto search is completed the actual Time and Date are also set automatically. If the time in the recorder display is not correct, the clock must be set manually.

1. Select [Clock set] option then press ▶.
2. Use ▲ / ▼ to select [Auto] option then press ENTER.
3. If the clock that has automatically set is different with your local clock, you can add more time using [Time Offset] option. (For example, when summer time is started in local area.) Press ▶ to select [Time Offset] option.
4. Press ▲ / ▼ to select a value then press ▶ (0, 30, 60, 90, 120). Select "0" if the clock that has automatically set is identified with your local clock.
5. Press ▲ / ▼ to select a time zone then press ENTER.

Note:

There are cases where the TV station does not send, or sends wrong date and/or time information and the recorder sets the incorrect time.

If this happens, we recommend that you set the clock manually.

Manual Clock Set

1. Select [Clock set] option then press ▶.
2. Use ▲ / ▼ to select [Manual] option then press ENTER.
3. Enter the necessary information for date and time.
 - ◀ / ▶ (left/right): Moves the cursor to the previous or next column.
 - ▲ / ▼ (up/down): Changes the setting at the current cursor position.
4. Press ENTER to confirm your setting.

TV Aspect

Selects the aspect ratio of the connected TV (4:3 standard or wide).

- [Letter Box] Select this when connecting to a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
- [Pan Scan] Select this when connecting to a 4:3 screen TV. Automatically displays a wide picture on the entire screen and cuts off the portions that do not fit.
- [16:9] Select this when connecting to a wide-screen TV or TV with a wide mode function.

Note:

If the resolution is set to 720p or 1080i, [TV Aspect] will be disable in the setup menu.

General Settings (Continued)

Power Save Mode

You can set up the unit into an economic power save mode. Nothing is displayed in the display window when the unit is turned off.

- [OFF] Power Save Mode is not active.
- [ON] Power Save Mode is active.

Note

The Power Save Mode is not available in the standby mode for the timer recording.

Antenna feed 5V

If you are using an active antenna, you will have to switch on the antenna feed (DC 5V/100mA). The antenna will be supplied via the ANTENNA IN input. In case of overload, or if there is a short circuit in the antenna feed, this will be switched off automatically. If this occurs, please repair the fault, then switch on the antenna feed again.

Initialization

You can reset the recorder to its original factory settings and initialize the HDD.

- [Factory Set] If you need to, you can reset the recorder to all its factory settings. Some options cannot be reset. (DVD Rating, Password, and Area Code) Select [Factory Set] icon then press ENTER and auto setup menu will appear, see page 15.
- [HDD format] Initializes the HDD (Hard Disk Drive): everything recorded on the HDD will be erased.
 1. Select [Initialize] option then press ►.
 2. Press ▲ / ▼ to select the desired option then press ENTER.
The confirm message will appear.
 3. Use ◀ / ▶ to select [Yes] or [No] then press ENTER.

Language Settings



Display Menu

Select a language for the Setup menu and on-screen display.

Disc Menu/Audio/Subtitle

- [Original] Refers to the original language in which the disc was recorded.
- [Other] To select another language, press ENTER. Press number buttons then ENTER to enter the corresponding 4-digit number according to the language code list in the reference chapter (see page 61). If you enter the wrong language code, press CLEAR.
- [Off](for Disc Subtitle) : Turn off Subtitle.

DTV Audio

Digital channels sometimes provide multiple audio tracks, often in a different language. You can set a default audio language with this setting.

Tips:

If provided by the broadcaster, you can also select a different audio language while viewing TV by pressing AUDIO repeatedly.

DTV Closed Caption

Digital channels sometimes provide Closed Caption, often in a different language. You can set a default Closed Caption language with this setting.

Note:

DTV Closed Caption will appear only if provided by the broadcaster.

Tips:

- If available, you can also select a Closed Caption language while viewing digital TV viewing, press SUBTITLE repeatedly.
- If Closed Captions are available, the DTV Closed Caption icon (CC) appears on the program information display to indicate that you can select one of those Closed Caption options with the SUBTITLE button.

DivX Subtitle

You can select a language code for DivX subtitle.

Audio Settings

Each DVD disc has a variety of audio output options. Set the recorder's Audio Output according to the type of audio system you use.



Dolby Digital / DTS / MPEG

- [Bitstream]: Select "Bitstream" if you connect the recorder's DIGITAL AUDIO OUTPUT jack to an amplifier or other equipment with a Dolby Digital, DTS or MPEG decoder.
- [PCM] (for Dolby Digital / MPEG): Select when connected to a two-channel digital stereo amplifier. DVDs encoded in Dolby Digital or MPEG will be automatically downmixed to two-channel PCM audio.
- [Off] (for DTS): If you select "Off", the DTS signal is not output through the DIGITAL AUDIO OUTPUT jack.

Sampling Frequency

If your receiver or amplifier is NOT capable of handling 96 kHz signals, select [48 kHz]. When this choice is made, this unit will automatically convert any 96 kHz signals to 48 kHz so your system can decode them.

If your receiver or amplifier is capable of handling 96 kHz signals, select [96 kHz]. When this choice is made, this unit will pass each type of signal through without any further processing.

DRC (Dynamic Range Control)

With the DVD format, you can hear a program's soundtrack in the most accurate and realistic presentation possible, thanks to digital audio technology. However, you may wish to compress the dynamic range of the audio output (the difference between the loudest sounds and the quietest ones). Then, you may listen to a movie at a lower volume without losing clarity of sound. Set DRC to [ON] for this effect.

Vocal

Set Vocal to [ON] only when a multi-channel karaoke DVD is playing. The karaoke channels on the disc will mix into normal stereo sound.

Lock (Parental Control) Settings



Lock System

Allows you to set up specific programs and ratings through blocking schemes. Also allows you to activate or disable all of the lock schemes previously set up. A password is required to gain access to the lock menu options. When the Lock System is set to [OFF], the Parental Guidance is not effective.

1. Select [Lock System] option then press ►.
2. To access the Lock System, DVD Rating, Parental Guidance, Set Password and Area Code features, you must input the 4-digit password you created. If you have not yet entered a password you are prompted to do so. Input a 4-digit code. Enter it again to verify. If you make a mistake, press CLEAR.
3. Select [ON] or [OFF] using the ▲ / ▼ buttons.
4. Press ENTER to confirm your setting.

DVD Rating

Blocks playback of rated DVDs based on their content. Not all discs are rated.

1. Select [DVD Rating] option then press ►.
2. Follow step 2 as shown "Lock System".
3. Select a rating using the ▲ / ▼ buttons.
[1] - [8]: Rating one (1) has the most restrictions and rating eight (8) is the least restrictive.

[No Limit]: If you select [No Limit], parental control is not active and the disc plays in full.

4. Press ENTER to confirm your rating selection.

Note:

If you set a rating for the recorder, all disc scenes with the same rating or lower are played. Higher rated scenes are not played unless an alternate scene is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, playback stops. You must enter the 4-digit password or change the rating level in order to play the disc.

Lock (Parental Control) Settings (Continued)

Parental Guidance

You can set the ratings to block out all the programs with ratings above a specified level.

1. Select [Parental Guidance] option then press ►.
2. Follow step 2 as shown "Lock System".
3. Select a rating using the ▲ / ▼ buttons.
 - OFF: Cancel the blocking.
 - R (Restricted 18+): Not for children under age 18. Strong elements of sex and/or violence.
 - AV (Adult Audience strong violence 15+)
 - MA (Mature Adult Audience 15+): Mature Adult only. Mature Audience Only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 15.
 - M (Mature Audience 15+): Mature Audience only. This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 15.
 - PG (Parental Guidance Recommended): Content is such that parents may not want their children to view the program.
 - G (General Audiences): Content is not offensive to most viewers.
 - C (Children's 7+): This program is designed for age 7 and above.
 - P (Pre school 5+): This program is designed for age 5 and above.
 - All Block: Blocks all programs.
4. Press ENTER to confirm your rating selection.

Note:

If you set a rating for the recorder, all programs with the same rating or lower are viewed. Higher rated scenes are not viewed unless an alternate scene is available in the program. The alternative must have the same rating or a lower one. If no suitable alternative is found, you cannot view the program. You must enter the 4-digit password or change the rating level in order to view the program.

Set Password

1. Select [Set Password] option then press ►.
2. Follow step 2 as shown "Lock System".
 - To change the password, select the [Change], press ENTER and input the new 4-digit code then press ENTER. Input it again to verify.
 - To delete the password, select [Delete] then press ENTER.

If you forget your 4-digit code

If you forget your password, to clear the current password, follow the procedure below.

1. Display Setup menu then select an 1 level icon.
2. Use the Number buttons to enter the 6-digit number "210499".
3. Select [Yes] then press ENTER. The 4-digit password is cleared. Enter a new code.

Area Code

Enter the code of an area whose standards were used to rate the DVD video disc, referring to the list (See "Area Codes", page 61.).

1. Select [Area Code] option then press ►.
2. Follow step 2 as shown "Lock System".
3. Select the first character using the ▲ / ▼ buttons.
4. Shift the cursor using ► buttons and select the second character using ▲ / ▼ buttons.
5. Press ENTER to confirm your area code selection.

DivX Registration Code

We provide you the DivX® VOD (Video On Demand) registration code that allows you to rent and purchase videos using the DivX® VOD service. For more information, visit www.divx.com/vod.

1. Select [DivX Reg. Code] option then press ►.
2. Press ENTER while [View] is selected and the registration code will appear.
3. Use the registration code to purchase or rent the videos from DivX® VOD service at www.divx.com/vod. Follow the instructions and download the video onto a disc for playback on this unit.

Note:

All the downloaded videos from DivX® VOD can only be played back on this unit.

Recording Settings



Record Mode Set

You can set the picture quality for recording; XP (High Quality), SP (Standard Quality), LP (Low Quality), EP (Extend Quality), MLP (Maximum Long Play)

- **XP** – Highest quality setting, gives about 1 hour of recording time on a DVD (4.7GB).
- **SP** – Default quality, sufficient for most applications, gives about 2 hours of recording time on a DVD (4.7GB).
- **LP** – Slightly lower video quality, gives about 4 hour of recording time on a DVD disc (4.7GB).
- **EP** – Low video quality, gives about 6 hour of recording time on a DVD (4.7GB).
- **MLP** – The longest recording time with the lowest video quality, gives about 11 hours of recording time on a DVD (4.7GB).

Note:

You may see a fragmented picture or distorted subtitle during playing back the contents recorded in EP and MLP mode.

Record Aspect

When recording, you can set the recording aspect ratio to suit the material you're recording (16:9 or 4:3).

Note:

This option does not affect to the MPEG4 recording.

DV Recording Audio

You need to set this if you have a camcorder using 32kHz/12-bit sound connected to the front panel DV IN jack.

Some digital camcorders have two stereo tracks for audio. One is recorded at the time of shooting; the other is for overdubbing after shooting.

On the Audio 1 setting, the sound that was recorded while shooting is used.

On the Audio 2 setting, the overdubbed sound is used.

TV Recording Audio

When TV recording with bilingual, you can choose audio channel to record.

[Main+Sub] Main language and Sub language

[Main] Main language only

[Sub] Sub language only

Auto Chapter

When DVD recording, chapter markers are put in specified setting. You can change this interval to 5 minutes, 10 minutes or 15 minutes. If you select [None], switch off automatic chapter marking altogether with the [None] setting.

Timeshift

Set this option to [ON] make this unit to use the Timeshift function automatically without pressing the TIMESHIFT button. The Timeshift function will start automatically about 5 seconds after the TV tuner mode is start.

If you want to use this function manually, see "Timeshift" on page 42.

[ON] Use Timeshift function automatically.

[OFF] Use Timeshift function manually.

MPEG4

When HDD recording, you can set the video recording format to MPEG2 or MPEG4. If you want to record a video with MPEG4 format, select [ON]. When this choice is made, this unit will record the video with MPEG4 format on the HDD.

[OFF] For MPEG2 recording in HDD mode

[ON] For MPEG4 recording in HDD mode

Disc Settings

Disc Format

If you load a completely blank disc, the recorder will initialize the disc.

DVD-R: The recorder initialize the disc to Video mode. The recording mode will always be Video mode.

DVD-RW/DVD+R(DL)/DVD-RAM: The Initialize menu will appear. Select [Yes] then press ENTER. DVD-RW disc is initialized to Video mode.

Also, you can reformat the DVD-RW/DVD+RW/DVD-RAM from the Setup menu as below.



1. Select [Disc Format] option then press ►.
2. Press ENTER while [Start] is selected. Format Disc menu appears.
3. Use ◀ / ▶ to select a desired mode (VR Mode or Video Mode) then press ENTER. Confirm message will appear. For DVD+RW and DVD-RAM discs, go to step 4.
4. Use ◀ / ▶ to select [OK] then press ENTER. It takes a few moments to initialize the disc.

Caution

If you want to change the disc format, everything recorded on the disc will be erased.

Finalize

Finalizing 'fixes' the recordings in place so that the disc can be played on a regular DVD player or computer equipped with a suitable DVD-ROM drive. Finalizing a disc creates a menu screen for navigating the disc. This is accessed by pressing MENU/LIST or TITLE.

Caution

- Once you have finalized a DVD-R and DVD+R disc, you cannot edit or record anything else on that disc.
- You can record and edit a DVD-RW disc by choosing [Unfinalize] option.
- You can edit or record on the DVD+RW disc even after finalizing.



1. Select [Finalize] option then press ►.
2. Press ENTER while [Finalize] is selected. Finalize menu appears.
3. Select [OK] then press ENTER. The recorder starts finalizing the disc.

Notes:

- How long finalization takes depends on the type of disc, how much is recorded on the disc, and the number of titles on the disc.
- DVD+R DL disc can take up to 30 minutes to finalize.

Tips

- If you load a DVD-RW that has already been finalized, you can 'Unfinalize' it by choosing Unfinalize from the Finalize menu. After doing this, you can edit and re-record onto the disc.
- You cannot unfinalize a DVD-R and DVD+R disc.
- If [Disc Protect] option is set to [ON], the finalize is not available. To finalize, set [Disc Protect] option to [OFF].

Disc Settings (Continued)

Disc Label

Use this to enter a name for the disc. This name appears when you load the disc and when you display disc information on-screen.

- The disc name can be up to 32 characters long.
 - For discs formatted on a different recorder, you will see only a limited character set.
1. Select [Disc Label] option then press ►.
 2. Press ENTER while [Edit] is selected. Keyboard menu appears.
To enter characters, see page 53.

Disc Protect

When recording in DVD-RAM / DVD+RW / +R disc or VR mode formatted DVD-RW disc, set to [ON] to prevent accidental recording, editing or deleting of the disc loaded. If you need to unlock the disc to make edits, select [OFF].

PBC

PBC stands for Playback Control and refers to special menus and navigation features that are available on some Video CDs.

- [ON] Video CDs are played according to the PBC, if available.
- [OFF] Video CDs are played the same way as Audio CDs.

Network Settings

Software Update

Your recorder is able to receive updates to some of its features and functions. These updates will occur automatically, usually at times when the recorder would likely be turned off.

If your recorder is on when an update is sent, you may experience a disruption in reception for a few hours. The recorder turns off then turn the unit back on after the update is complete.

Please consult the [System Info] screen to check for an upgrade planned by service provider or distributor.

Caution:

Your recorder must be plugged into AC power to receive any updates. Do not unplug your recorder while an update is in progress.



[Standby mode] Press ENTER to update the software when this unit is turned off. Check mark appears. (Updated time: At every 3:00, 9:00, 15:00 and 21:00 o'clock)

[Operation Mode] Press ENTER to update the software when this unit is turned on. Check mark appears.

- [Time] Set time to update the software.
- [Freq.] Selects frequency to update the software. (Weekly or Daily)
- [Start] Press ENTER to update right now.

Note:

If the recorder is turned on, the update is not activated during recording, Timeshift, viewing teletext or program guide, etc.

System Information

Shows system information. (software version, DTV Signal Quality and DTV Signal Strength)



Displaying Information

Displaying Information while TV viewing

During viewing the TV, press DISPLAY to display/remove the information displayed on-screen.

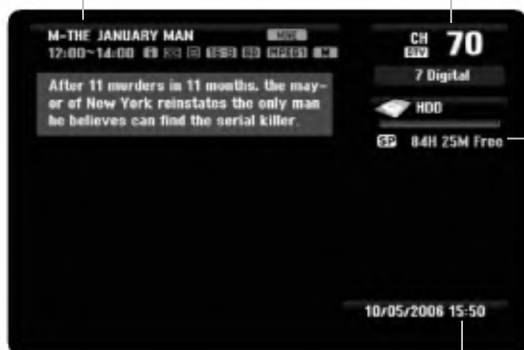
Note:

Program information is dependant and supplied by broadcaster. In some cases when DISPLAY button is pressed it may not be present or updated. In these cases please wait a few seconds before pressing DISPLAY button again so as the unit can update information.

Indicates the disc format, free space, and elapsed time progress bar.

Indicates channel number, station name, and audio signal by the tuner.

Indicates program title, start time, end time, etc. Details are below. (Digital program only)



Indicates current date and time.

(Extended Text Message Icon):

Indicates that there is an Extended Text Message available to provide detailed descriptions of the program (see page 27).

(DTV Closed Caption Icon)

Indicates that the current program contains the Closed Caption.

(Wide Icon)

Indicates that the current program is shown in wide picture format.

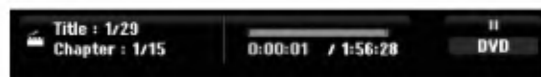
(Teletext Icon):

Indicates that there is a Teletext available (see page 29).

Displaying Disc Information on-screen

You can display various information about the disc loaded on-screen.

1. Press DISPLAY once to show current status.



2. Press DISPLAY once again to show various playback information. The items displayed differ depending on the disc type or playing status.



3. You can select an item by pressing ▲ / ▼ and change or select the setting by pressing ◀ / ▶. For details about each item, see the pages in parenthesis.
 - [Title]: Current title (or track) number/total number of titles (or tracks) (page 30, 32)
 - [Chapter]: Current chapter number/total number of chapters (page 30)
 - [Time]: Elapsed playing time (page 32)
 - [Audio]: Selected audio language (DVD VIDEO only) or audio channel (page 31)
 - [Subtitle]: Selected subtitle (page 31)
 - [Angle]: Selected angle/total number of angles (page 32)
 - [Sound]: Selected sound mode (page 33)

Note:

If no button is pressed for 10 seconds, the on-screen display disappears.

TV Viewing

Program Guide (Digital program only)

The Program Guide contains schedule and program information for digital programs. They also provide local over-the-air programs information including conventional digital programs. Use the Program Guide to find programs easily and conveniently and to view schedule and descriptive program information for the programs.

To Display the Program Guide

Press the GUIDE button on your remote control.

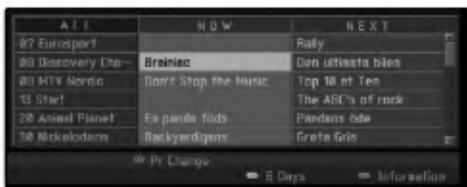
To Exit the Program Guide

Press the RETURN (↵) button to return to the last program you tuned to.

To change guide menu

The guide screen provides two search menus. Press yellow colour button when the Program Guide is displayed.

- Now/Next: The screen shows now and next programs.



- 8 Days: The screen shows programs within 8 days.



To navigate through programs on the Guides

Use ◀/▶/▲/▼ on your remote control to navigate the guide screen.

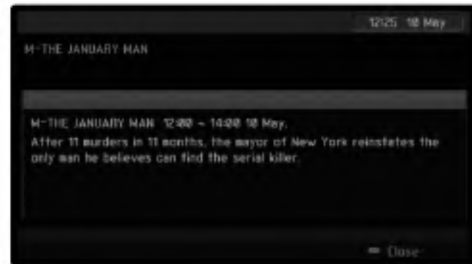
You can move faster through programs by scrolling page-by-page with the ◀◀ or ▶▶ buttons on the remote control. Each button stroke scrolls one page up or down.

To tune to another current channel

Use ◀/▶/▲/▼ to select a current channel then press ENTER. You can watch the channel.

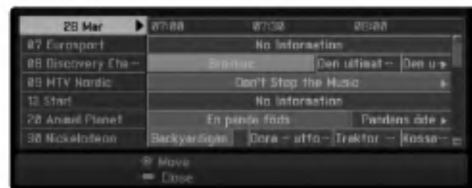
To display the Full Information window

You can view detail information for the highlighted program. Press blue colour button to display detail information window. To exit the detail information window, press blue colour button again.



To change date

When the Program Guide with 8 days is displayed, you can also change the date of the Program Guide by pressing the green colour button then use ◀/▶ to select a date then press ENTER.



Timer Recording with Program Guide

You can set a timer record using program guide with 8 days.

1. Display Program Guide with 8 days.
2. Select a program then press red colour button. The red timer icon will be displayed and the program will be memorized by the recorder. You can check the programming on the Timer Record List menu (see page. 45).
3. To release the timer recording, select the program then press red colour button. The red timer icon disappears.



Program Selection

You can select a program as shown below.

Number buttons

Use Number (0-9) buttons to select a program directly.

FAV button

Press to scroll through your favourite programs.

PR +/- buttons

Use PR +/- on the remote control or PROG ▲ / ▼ on the front panel to cycle the recorder through the programs in memory.

Program List

Three types of program lists are provided for easy and quick program searching.

ANALOGUE TV: The list of all analogue TV programs.

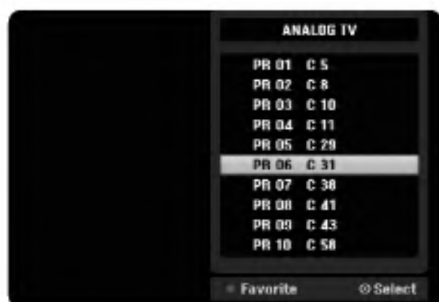
DIGITAL TV: The list of all digital TV programs.

RADIO: The list of all Radio programs.

Displaying Channel List and Changing Channel

You can display channel list using the ENTER button and switch into other channel on the channel list.

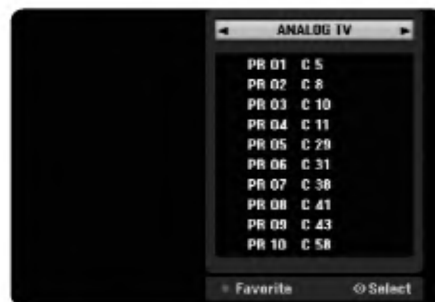
1. Press ENTER while watching a program to display the channel list.
2. Select your desired channel using the ▲ / ▼ and press ENTER to change the channel.



Switching Program List

You can switch the program list to DIGITAL TV, ANALOG TV, or RADIO

1. Press ▲ to move the highlight position to top of the program list.
2. Press ◀ / ▶ to select a [DIGITAL TV], [ANALOG TV], or [RADIO]. Selected program list appears.



Displaying the Favourite Program List

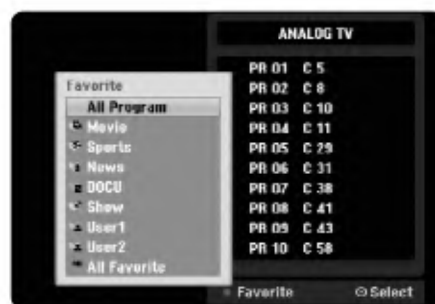
You can display favourite channel list: The list of the favourite channels with several-groups that you can organise channels by your private taste.

Note:

To set a favourite program, use [Program Edit] option in the Setup menu. (See page 18.)

1. Press ENTER while watching a program to display the program list.
2. Press Red button. The favourite options appears.
3. Press ▲ / ▼ to select a favourite option then press ENTER.

The selected option's program list appears.



Teletext Operation

Teletext is an optional function, therefore only those with the teletext system can receive the teletext broadcast.

Teletext is a free service broadcast by some TV stations which gives up-to-the-minute information on news, weather, television programs, share prices and many other topics.

The teletext decoder can support the SIMPLE systems. SIMPLE (standard teletext) consists of a number of pages which are selected by directly entering the corresponding page number.

Teletext in Service

The recorder gives you access to teletext which is greatly improved in various aspects such as text and graphics. This teletext can be accessed by special teletext services and specific services which broadcast teletext.



1. Press number or PR (+/-) buttons to select a program which broadcast teletext.
2. Press **TEXT** to access on the teletext.
3. Follow the indications on teletext and move onto the next or previous step by pressing colour (RED or GREEN) or SKIP (◀◀ / ▶▶) buttons and so on.
4. Press **TEXT** or RETURN (↵) to switch off teletext and return to TV viewing.

Teletext on/off

1. Press **TEXT** to switch to teletext. The initial page or last page appears on the screen. Two page numbers, TV station name, date and time are displayed on the screen headline. The first page number indicates your selection, while the second shows the current page displayed.
2. Press **TEXT** or RETURN (↵) to switch off teletext.

Note:

If your TV is in zoom mode, the Teletext menu screen may be cut off.

In this case, set the TV's zoom mode to normal to display the menu screen properly.

Page selection

1. Enter the desired page number as a three digit number with the numbered buttons. If during selection you press a wrong number, you must complete the three digit number and then re-enter the correct page number.
2. Use RED/GREEN buttons to move up and down pages.

Special Teletext Functions

TEXT (MIX) button

Displays the teletext pages superimposed on the TV picture.

To switch the TV picture off press this button again.

TEXT (INDEX) button

The teletext pages are colour coded along the bottom of the screen and are selected by pressing the corresponding coloured button.

TEXT (FREEZE) button

Stops the automatic page change which will occur if a tele-text page consists of 2 or more sub pages. When this button is pressed the stop symbol is displayed at the top left-hand corner of the screen and the automatic page change is inhibited. To continue press this button again.

Playback

General Playback Features

1. Load your chosen disc in the tray, with the playback side down.
2. Starts playback using HOME menu (see page 16).
3. To stop the playback, press STOP (■).
The unit records the stopped point, depending on the disc. "■■■" appears on the screen briefly.
Press PLAY (▶) to resume playback (from the scene point). If you press STOP (■) again or unload the disc ("■" appears on the screen.), the unit will clear the stopped point.
4. Press OPEN/CLOSE (▲) to remove the disc.
Press OPEN/CLOSE (▲) to close disc tray or press POWER (⏻), the disc tray closes automatically and unit turns off.

Note:

If Parental Control is set and the disc is not within the DVD Rating settings (not authorized), the 4-digit code must be entered and/or the disc must be authorized (see "DVD Rating", on page 21).

Buttons	Operations	Discs
OPEN / CLOSE (▲)	Opens or closes the disc tray.	All Discs
PAUSE/STEP (⏸)	During playback, press PAUSE/STEP (⏸) to pause playback. Press PAUSE/STEP (⏸) repeatedly to play Frame-by-Frame. Tip: You can advance or back up the picture frame-by-frame by pressing ◀ / ▶ repeatedly during PAUSE mode. The picture frame-by-frame in reverse is not available for Video CD.	All Discs or HDD HDD DVD ALL VCD
SKIP (⏮ / ⏭)	During playback, press SKIP (⏮ or ⏭) to go to the next chapter/track or to return to the beginning of the current chapter/track. Press SKIP ⏮ twice briefly to step back to the previous chapter/track. Tips: <ul style="list-style-type: none"> • To go directly to any chapter during DVD playback, press DISPLAY twice and press ▲ / ▼ to select the chapter icon. Then, input the chapter number or use ◀ / ▶. • On an Audio CD, to go directly to any track, enter the track number using the numbered buttons (0-9) during playback. 	HDD DVD ALL VCD DivX ACD MP3 WMA
SCAN (◀◀ / ▶▶)	During playback, press SCAN (◀◀ or ▶▶) repeatedly to select the required scan speed. HDD, DVD; 5 steps DivX; 4 steps Video CD, Audio CD; 3 steps While the playback is paused, press SCAN (◀◀ or ▶▶) repeatedly to play in slow motion. HDD, DVD; 4 steps Video CD; 3 steps (Forward only)	HDD DVD ALL VCD DivX ACD HDD DVD ALL VCD
ZOOM	During playback or pause mode, press ZOOM to enlarge the video image. (x1 size → x2 size → x4 size → x1 size (normal size)) You can move through the zoomed picture using ◀ ▶ ▲ ▼ buttons.	HDD DVD ALL VCD

General Playback Features (Continued)

Buttons	Operations	Discs
REPEAT	<p>During playback, press REPEAT repeatedly to select a desired repeat mode.</p> <p>HDD (Title/Off) DVD, Video mode DVD-R/RW (Chapter/Title/Off) VR mode DVD-RW, DVD+R/RW, DVD-RAM (Chapter/Title/All/Off) Video CD, Audio CD (Track/All/Off) MP3/WMA (Track/Folder/Off)</p> <p>Notes:</p> <ul style="list-style-type: none"> On a Video CD with PBC, you must set PBC to [OFF] in the Setup menu to use the Repeat function. See page 25. If you press SKIP (▶▶) once during Repeat Chapter (Track) playback, the repeat playback cancels. <p>For repeat A-B During playback, press REPEAT repeatedly to select point A then press ENTER to select point B Repeats a sequence from point A (Starting point) to point B (End point). To stop A-B repeat, press REPEAT repeatedly to select [OFF].</p> <p>Note: You cannot select a sequence less than 5 seconds.</p>	<p>HDD DVD ALL VCD ACD MP3 WMA</p> <p>HDD DVD ALL VCD ACD</p>
TITLE	<p>If the current DVD title has a menu, the title menu appears on the screen. Otherwise, the disc menu appears.</p>	DVD
MENU/LIST	<p>The disc menu appears on the screen.</p>	DVD
SUBTITLE	<p>During playback, press SUBTITLE then press ◀ / ▶ repeatedly to select a desired subtitle language.</p>	DVD DivX HDD
AUDIO	<p>Press AUDIO then press ◀ / ▶ repeatedly to hear a different audio language, audio track or encoding method.</p> <p>Note: Some discs feature both Dolby Digital and DTS soundtracks. There is no analogue audio output when DTS is selected. To listen to the DTS soundtrack, connect this recorder to a DTS decoder via one of the digital outputs. See page 14 for connection details.</p> <p>Press AUDIO then press ◀ / ▶ repeatedly during playback to hear a different audio channel (STEREO, LEFT or RIGHT).</p> <p>With DVD-RW discs recorded in VR mode and HDD that have both a main and a Bilingual audio channel, you can switch among Main (L), Sub (R), or Main+sub (L+R).</p> <p>Press AUDIO repeatedly during playback to hear a different audio channel (STEREO, LEFT or RIGHT).</p>	<p>DVD DivX</p> <p>HDD DVD ALL VCD</p> <p>ACD MP3 WMA</p>

If a menu screen is displayed **DVD** **VCD**

The menu screen may be displayed first after loading a DVD or Video CD which contains a menu.

DVD

Use the ◀ / ▶ / ▲ / ▼ buttons to select the title/chapter you want to view, then press ENTER to start playback.

Press TITLE or MENU/LIST to return to the menu screen.

VCD

- Use the number buttons to select the track you want to view.
Press RETURN (↵) to return to the menu screen.
- Menu setting and the exact operating procedures for using the menu may differ depending on the disc. Follow the instructions on the each menu screen. You may also set PBC to [OFF] under Setup menu (see page 25).

Moving to another TITLE

HDD **DVD ALL** **DivX**

When a disc has more than one title, you can move to another title as follows:

- Press DISPLAY twice during playback then use ▲ / ▼ to select the title icon. Then, press the appropriate numbered button (0-9) or press ◀ / ▶ then press ENTER to select a title number.

Time Search **HDD** **DVD ALL** **DivX**

To start playing at any chosen time on the disc:

1. Press DISPLAY twice during playback. The time search box shows the elapsed playing time.
2. Press ▲ / ▼ to select the time clock icon and "0:00:00" appears.
3. Input the required start time in hours, minutes, and seconds from left to right.
If you enter the wrong numbers, press ◀ / ▶ to move the under bar () to the wrong number. Then enter the correct numbers.
4. Press ENTER to confirm. Playback starts from the selected time.

Marker Search 1/6

HDD **DVD ALL** **VCD**

To enter a Marker

You can start playback from up to six memorized points. To enter a marker, press MARKER at the desired point on the disc. The Marker icon appears on the TV screen briefly. Repeat to enter up to six markers.

To Recall or Clear a Marked Scene

1. During disc playback, press SEARCH. The marker search menu appears on the screen.
2. Use ◀ / ▶ / ▲ / ▼ to select a marked scene that you want to recall or clear.
3. Press ENTER and playback starts from the marked scene.

or

Press CLEAR and the confirm message will appear. Select [Yes] and press ENTER to erase the scene from the marker search menu.

Note:

All markers are erased if you edit the HDD title (Delete Part, Divide, Combine).



Camera Angle **DVD**

If the disc contains scenes recorded at different camera angles, you can change to a different camera angle during playback.

1. Press DISPLAY twice during playback.
The On-Screen Display appears on the TV screen.
2. Use ▲ / ▼ to select the Angle icon in the On-Screen Display.
3. Use ◀ / ▶ to select a desired angle.
The number of the current angle appears on the TV screen.

Tip:

The ANGLE indicator will blink on the TV screen at scenes recorded at different angles to indicate that angle switching is possible.

3D Surround **DVD ALL VCD DivX**

This unit can produce a 3D Surround effect, which simulates multi-channel audio playback from two conventional stereo speakers, instead of the five or more speakers normally required to listen to multichannel audio from a home theatre system.

1. Press DISPLAY twice during playback.
The On-Screen Display appears on the TV screen.
2. Use ▲ / ▼ to select the Sound icon in the On-Screen Display.
3. Use ◀ / ▶ to select "3D SUR".
To turn off the 3D Surround effect, select "NORMAL".

Last Condition Memory **DVD**

This recorder memorizes the user settings for the last disc that you have viewed. Settings remain in memory even if you remove the disc from the recorder or switch off the recorder. If you load a disc that had its settings memorized, the latest stop position is automatically recalled.

Notes:

- Settings are stored in memory for use any time.
- This recorder does not memorize settings of a disc, if you press STOP twice or switch off the recorder before commencing to play it.

Random **Karaoke DVD VCD**

1. Press RANDOM during playback.
The unit automatically begins Random Playback and "RANDOM" appears on the TV screen.
2. To return to normal playback, press RANDOM until "NORMAL" appears on the TV screen.

Tip:

By pressing SKIP ►► during Random playback, the unit selects another title (track) and resumes Random playback.

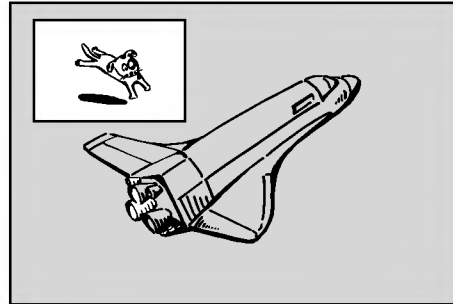
Notes:

- This function only works with DVD Karaoke discs or video CDs without PBC.
- On a Video CD with PBC, you must set PBC to OFF in the Setup menu to use the Random function. See page 25.

PIP (Picture in Picture)

HDD DVD ALL VCD

This function enables you to view the stored stations in sub picture during playback.



On and off

Press PIP to switch on the sub picture, press this button again to switch it off.

Input mode selection for sub picture

Press AV to select the input mode for the sub picture. Each time this button is pressed, each input mode for the sub picture is displayed as shown below.

Tuner → AV1 → AV2

Program selection for sub picture

Use PR (+/-) to change the program when sub picture's input is set to tuner. The selected program number is displayed on the TV screen. You can view the selected program by pressing STOP (■).

Sub picture position change

Press ◀ / ▶ repeatedly until desired position is achieved. The sub picture moves clockwise or counter clockwise.

Zoom Sub picture

Press ZOOM repeatedly to enlarge the sub picture, the magnification level increases up to three steps.

Playing a DivX Movie File

The recorder can play DivX files. Before playing DivX files, read "DivX file requirement" on right.

1. Press HOME then select [MOVIE] option.
2. Select a media that contains DivX file(s) then press ENTER.
The [Movie List] menu appears on the TV screen.



3. Press ▲ / ▼ / ◀ / ▶ to select a folder, and press ENTER. A list of files in the folder appears. If you are in a file list and want to return to the Folder list, use the ▲ / ▼ / ◀ / ▶ buttons on the remote to highlight [New Album] and press ENTER.
4. If you want to view a particular file, press ▲ / ▼ / ◀ / ▶ to highlight a file and press PLAY (▶).
You can use variable playback functions.
Refer to pages 30-33.
5. Press STOP to stop the playback. The [Movie List] menu appears.
 - To exit the menu screen, press HOME and select [TV] option then press ENTER.

Notice for displaying the DivX subtitle

If the subtitle does not display properly, please follow the steps below.

1. Press PAUSE/STEP when the subtitle appears.
2. Press and hold SUBTITLE about 3 seconds.
The language code will appear.
3. Press ◀ / ▶ to select another language code until the subtitle is displayed properly.
4. Press PLAY (▶) to continue playback.

Note:

The DivX subtitle file name has to be identified with the DivX file name to display by this unit.

Movie List menu options

1. Press ▲ / ▼ / ◀ / ▶ to select a folder/file on the [Movie List] menu then press ENTER.
[Movie List] menu options appear.
The menu options displayed differ depending on the selected media.

2. Press ▲ / ▼ / ◀ / ▶ to select an option, and press ENTER.
 - [Play] Start playback the selected title.
 - [Open] Opens the folder and a list of files in the folder appears.
 - [Delete] Deletes the file(s) or folder(s) from the media.
 - [Rename] Edits the file name. (page 39)
 - [Move] Moves the file(s) to another folder or media. (page 40)
 - [Copy] Copies the file(s) to another folder or media. (page 40)

Tip:

You can create new folder. Select [New Album] option on the [Movie List]-HDD menu then press ENTER.
"NONAME##" folder is created.

DivX file requirement

Available resolution size: 720x576 (W x H) pixel

DivX file extensions: ".avi", ".divx"

Playable DivX subtitle: ".smi", ".srt",
".sub (Micro DVD or Sub Viewer 1.0/2.0 format)",
".txt (Micro DVD or Sub Viewer 1.0/2.0 format)"

Playable Codec format: "DIV3", "MP43", "DIVX",
"DX50"

Playable Audio format: "AC3", "PCM", "MP2",
"MP3", "WMA"

- Sampling frequency:
within 8 - 48 kHz (MP3), within 32 - 48kHz (WMA)
- Bit rate:
within 8 - 320kbps (MP3), 32 - 192kbps (WMA)

CD-R Format: ISO 9660 and JOLIET.

DVD±R/RW Format: ISO 9660 (UDF Bridge format)

Maximum Files/Disc: Less than 1999 (total number of files and folders)

Notes on DivX format

- If the video and audio structure of DivX file is not interleaved, returns to the menu screen.
- If there is impossible code to express in the DivX file name, it may be displayed as "□" mark.
- The unit does not support the file encoded with QPEL.
- If the file is encoded with GMC, the unit supports only 1-point of the record level.
* GMC?
GMC is the acronym for Global Motion Compensation. It is an encoding tool specified in MPEG4 standard. Some MPEG4 encoders, like DivX, have this option.
There are different levels of GMC encoding, usually called 1-point, 2-point, or 3-point GMC.

Playing an Audio CD or MP3/WMA file

The recorder can play audio CDs and MP3/WMA files. Before playing MP3/WMA files, read “MP3/WMA audio file requirement” on right.

1. Press HOME.
The HOME menu appears.
2. Select [MUSIC] option.
3. Select a media that contains MP3/WMA or audio title then press ENTER.
The [Music List] menu appears on the TV screen.



4. Use ▲/▼ to select a track then press PLAY (▶).
Playback starts.
You can use variable playback functions. Refer to pages 30-33.

Tips:

- Press DISPLAY to view ID3-Tag information for the MP3 file. If ID3-Tag information is not present, [ID3-Tag: None] will appear. If you select a folder, the number of subfolders and number of MP3/WMA files in the folder are displayed. Press DISPLAY again to remove the information screen.
- If you want to move to the upper directory, use the ▲ / ▼ to highlight and press ENTER.
- You also display HOME menu to select another media by pressing HOME.
- To exit the menu screen, press HOME and select [TV] option then press ENTER.

5. To stop playback at any time, press STOP.

Audio CD and Music menu options

1. Press ▲ / ▼ to select a folder/file on the Audio CD or Music menu then press ENTER.
The menu options appear.
The menu options displayed differ depending on the selected media.

2. Press ▲ / ▼ / ◀ / ▶ to select an option, and press ENTER.
 - [Play] Start playback the selected title.
 - [Random] Start or stop random playback.
 - [Open] Opens the folder and a list of files in the folder appears
 - [Delete] Deletes the file(s) from the media.
 - [Rename] Edits the file name. (page 39)
 - [Move] Moves the file(s) to another folder or media. (page 40)
 - [Copy] Copies the file(s) to another folder or media. (page 40)
 - [Program Add] Adds the track(s) to Program List. (page 36)

Tip:

You can create new folder. Select [New Album] option on the [Music List]-HDD menu then press ENTER. “NONAME##” folder is created.

Random

1. Press ▲ / ▼ to select a file then press ENTER.
The menu options appear.
2. Press ▲ / ▼ to select [Random] option then press ENTER.
The unit automatically begins random playback and “RANDOM” appears on the menu screen.
3. To return to normal playback, select [Random] option again then press ENTER.

Tips:

- By pressing SKIP during Random playback, the unit selects another track and resumes Random playback.
- You can start and stop random playback by pressing RANDOM button.

MP3/WMA audio file requirement

File extensions

“.mp3”, “.wma”.

Sampling frequency:

within 8 - 48 kHz (MP3), within 32 - 48kHz (WMA)

Bit rate:

within 8 - 320kbps (MP3), 32 - 192kbps (WMA)

CD-R Format:

ISO 9660 and JOLIET.

DVD±R/RW Format:

ISO 9660 (UDF Bridge format)

Maximum Files/Disc:

Less than 1999 (total number of files and folders)

Program Playback with Audio CD and MP3/WMA file

Program Playback enables you to make custom playlists of Audio CD or MP3/WMA tracks. Programs can contain up to 99 Audio CD tracks or 256 MP3/WMA files.

1. Use ▲ / ▼ to select a track/file (or folder) on the Audio CD or Music menu.

You can select all MP3/WMA files and folders on the Music menu by pressing CLEAR button. To cancel the selections, press CLEAR again.

Selecting multiple files/tracks (folders)

1. Press MARKER.

A check mark appears on the file/track or folder. Press MARKER again to cancel the marked file/track or folder.
2. Repeat step 1 to mark additional file/track (folders).
2. Press ENTER.

The options appear on the left side of the menu.
3. Use ▲ / ▼ to select the [Program Add] option then press ENTER.
4. Repeat steps 1-3 to mark additional tracks.

Note:

If you select a folder for Programmed Playback, all tracks/files in the folder are added to the Program List.



5. Use ► to move to the Program list.

The programmed track you selected last is highlighted on the program list.
6. Use ▲ / ▼ to select the track you want to start playing.
7. Press PLAY (►) to start.

Playback stops after playing the last programmed track in the program list.
8. To exit Program Playback and resume normal playback, select a track on the List and press PLAY (►).

Tip:

You can access or remove the Program List screen by pressing MENU/LIST.

Program List menu options

1. Press ▲ / ▼ to select a track/file on the Program List then press ENTER.

The menu options appear.



2. Use ▲ / ▼ to select an option then press ENTER to confirm your selection.
 - [Play] Playback begins in the order in which you programmed the tracks from the selected track.
 - [Random] Start or stop random playback.
 - [Delete] Deletes the track(s) from the Program List menu.
 - [Move] Moves the track(s) to change the program order.
 - [Save] Memorizes the program list. (HDD only)

Repeat Programmed Tracks

Press REPEAT to select the desired Repeat mode.

- [TRACK] Repeats the current track.
- [ALL] Repeats all tracks on the Program List.
- [OFF] Cancels Repeat mode (no display).

Erasing a Track from the Program List

1. Select the track you wish to erase from the Program List. Use MARKER button to select multiple tracks.
2. Press ENTER. The menu options appears
3. Select [Delete] option then press ENTER.

Changing Track Order in the Program List

1. Select the track you wish to move on the Program List. Use MARKER button to select multiple tracks.
2. Press ENTER. The menu options appears
3. Select [Move] option then press ENTER.
4. Use ▲ / ▼ to move the yellow bar to the desired location, then press ENTER.

Save Your Program List (HDD only)

This recorder memorizes the user program list that you have programmed.

1. Select a track on the Program List.

The menu options appear.
2. Select [Save] option then press ENTER.

The Program List is saved in the HDD's PROGRAM folder.

Viewing a JPEG File

The recorder can play JPEG files. Before playing JPEG recordings, read "Photo file requirement" on right.

1. Press HOME.
The HOME menu appears.
2. Select [PHOTO] option.
3. Select a media that contains JPEG file then press ENTER.
The [Photo List] menu appears on the TV screen.



4. Use ◀ / ▶ / ▲ / ▼ to select a file, then press ENTER.
The menu options appear on the left side of the menu.

Tips:

- If you want to move to the upper directory, use the ◀ / ▶ / ▲ / ▼ to highlight and press ENTER.
- You can also display HOME menu to select another media by pressing HOME.

5. Use ▲ / ▼ to select [Full Screen] then press ENTER.
The selected image is displayed in full screen.
Depending upon the size and number of JPEG files, it could take a long time for the recorder to read the files.



Press ENTER to appear or disappear this menu during viewing the full screen.

6. To stop viewing at any time, press STOP.
The [Photo List] menu appears.
 - To exit the menu screen, press HOME and select [TV] option then press ENTER.

Photo List menu options

1. Press ▲ / ▼ to select a file on the [Photo List] menu then press ENTER.
The menu options appear.
The menu options displayed differ depending on the selected media.
You can select all files and folders on the menu by pressing CLEAR button. To cancel the selections, press CLEAR again.

Selecting multiple files (folders)

1. Press MARKER.
A check mark appears on the file or folder.
Press MARKER again to cancel the marked file or folder.
 2. Repeat step 1 to mark additional file (folders).
2. Use ▲ / ▼ to select an option then press ENTER to confirm your selection.

- [Open] Opens the folder and a list of files in the folder appears
- [Full Screen] Shows the selected file as full screen.
- [Delete] Deletes the selected file from the media.
- [Slide Show] Displays Slide Show menu.
- [Rename] Edits the file name. (page 39)
- [Move] Moves the file(s) to another folder (album) or media. (page 40)
- [Copy] Copies the file(s) to another folder or media. (page 40)

Tip:

You can create new folder. Select [New Album] option on the [Photo List]-HDD menu then press ENTER.
"NONAME##" folder is created.

Photo file requirement

File extensions

“.jpg”

Photo size:

Less than 4MB recommended

CD-R Format:

ISO 9660 and JOLIET.

DVD±R/RW Format:

ISO 9660 (UDF Bridge format)

Maximum Files/Disc:

Less than 1999 (total number of files and folders)

Notes on JPEG file

- Progressive and lossless compression JPEG image files are not supported.
- Depending on the size and number of the JPEG files, it may take several minutes to read the contents of the media.

Skip Images

While viewing a picture, press SKIP (◀◀ or ▶▶) once to advance to the next file or return to the previous file.

Rotate Images

Use ▲ / ▼ while viewing a picture to flip the picture clockwise or counter clockwise.

View Slide Shows

1. Select [Slide Show] option on the [Photo List] menu (Refer to "Photo List menu options" on page 37).
2. Press ENTER.
The Slide Show menu appears.



3. Use ◀ / ▶ / ▲ / ▼ to set the options.
[Object] option:
 - [Selected] Views slide show only selected files. Use the MARKER button to select multiple files.
 - [All] Views slide show all files.[Speed] option:
Sets the Slide Show speed to [Slow], [Normal], or [Fast].
4. Select the [Start] option then press ENTER to start the Slide Show.
5. Press STOP to stop the Slide Show and returns to the [Photo List] menu.

To Pause the Slide Show

1. Press PAUSE/STEP (⏸) to pause slide show.
2. When you want to continue slide show, press PLAY (▶).

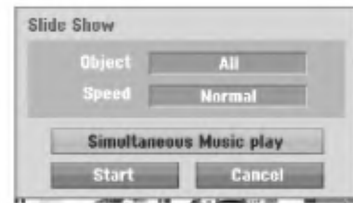
To listen to music while slide show simultaneously

You can display photo files while listening to MP3/WMA music files recorded on HDD.

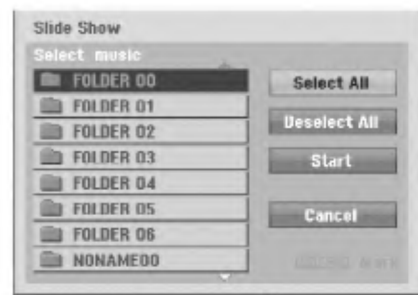
Note:

This function is not available during digital channel is recording.

1. Select [Slide Show] option on the [Photo List] menu (Refer to "[Photo List] menu options" on page 37).
2. Press ENTER.
The Slide Show menu appears.
3. Select [Simultaneous Music play] option on the Slide Show menu



4. Press ENTER.
Simultaneous Music play menu appears.
5. Press MARKER to select multiple files.
 - Select [Select All] option to select all tracks then press ENTER.
 - Select [Deselect All] option to deselect all selected tracks then press ENTER.
 - Select [Cancel] option to exit this menu then press ENTER.
6. Use ◀ / ▶ / ▲ / ▼ to highlight [Start] option then press ENTER.



7. Press STOP to stop the Slide Show and return to the [Photo List] menu.

Editing a MP3/WMA, JPEG, DivX file

These descriptions are MP3 file's operation for example, other kind's files are operated same way.

Erasing a file(s)/folder(s) from the HDD

You can erase MP3/WMA, JPEG or DivX file(s)/ folder(s) on the HDD.

1. Select a file you wish to erase on the menu.
You can select all files and folders on the menu by pressing CLEAR button. To cancel the selections, press CLEAR again.

Selecting multiple files (folders)

1. Press MARKER.
*A check mark appears on the file or folder.
Press MARKER again to cancel the marked file or folder.*

2. Repeat step 1 to mark additional file (folders).

2. Press ENTER.
The menu options appear on the menu.



3. Select [Delete] option then press ENTER.
The confirm message for deleting will appear.
Use ◀ / ▶ to select [Yes] then press ENTER.
The selected file(s) is deleted.

Naming a file on the HDD

You can name MP3/WMA, JPEG or DivX file(s)/ folder(s) on the HDD independently. Names can be up to 32 characters long.

1. Select a file you wish to rename on the menu.
2. Press ENTER.
The menu options appear on the menu.
3. Select [Edit] option then press ENTER.
Edit options appear.



4. Select [Rename] option then press ENTER.
Keyboard menu appears.
To enter characters, see page 53.



Copying a file(s) to the HDD

You can copy a file(s)/folder(s) to the HDD.

1. Select a file you wish to copy on the menu.
You can select all files and folders on the menu by pressing CLEAR button. To cancel the selections, press CLEAR again.

Selecting multiple files (folders)

1. Press **MARKER**.
A check mark appears on the file or folder.
Press **MARKER** again to cancel the marked file or folder.
2. Repeat step 1 to mark additional file (folders).
2. Press **ENTER**.
The menu options appear on the menu.
3. Select [**Edit**] option then press **ENTER**.
Edit options appears.
4. Select [**Copy**] option then press **ENTER**.
Copy menu appears.



5. You can select a album (folder) to copy.
 1. After selecting a media then press **ENTER**.
The album (folder) list appears.
 2. Select a folder.
Also, you can create new album (folder). Select [**New Album**] option on the Copy menu then press **ENTER**.
"NONAME##" folder is created.
6. Select [**Copy**] option then press **ENTER** to begin copying.



Note:

If a folder's depth is more than 5 level, the copy is not available.

Moving a file(s) to the other folder on the HDD

You can move a file(s)/folder(s) to the other folder on the HDD. After moving, the file(s)/folder(s) are deleted from the current location.

1. Follow steps 1-3 as shown left.
2. Select [**Move**] option then press **ENTER**.
Move menu will appear.



3. You can select a album (folder) to move.
 1. After selecting a media then press **ENTER**.
The album (folder) list appears.
 2. Select a folder.
Also, you can create new album (folder). Select [**New Album**] option on the Move menu then press **ENTER**.
"NONAME##" folder is created.
4. Select [**Move**] option then press **ENTER** to begin moving.



Recording

About DVD recording

Notes:

- This recorder cannot make recordings on CD-R or CD-RW discs.
- Our company takes no responsibility for recording failure due to power outages, defective discs, or damage to the Recorder.
- Fingerprints and small scratches on a disc can affect playback and/or recording performance. Please take proper care of your discs.

Disc types and recording formats, modes, and settings

This recorder can play various kinds of DVD discs: pre-recorded DVD-Video discs, DVD-RW, DVD-R, DVD-RAM, DVD+RW and DVD+R discs. The disc format for DVD-R, DVD+R, DVD+RW discs is always "Video format"—the same as pre-recorded DVD-Video discs. This means that once finalized, you can play a DVD-R, DVD+R, or DVD+RW in a regular DVD player. The DVD-RAM disc format is Video Recording (VR) format.

You can change DVD-RW disc format to Video or Video Recording (VR) format, if required. (Reinitializing the disc will erase the contents of the disc.)

The recording mode is closely related to the disc format. If the disc format is Video Recording format, then the recording mode is VR mode; if the disc format is Video mode, then the recording mode is Video mode (except for DVD-Video, which is not recordable, and so does not have a recording mode). Within the recording modes (which are fixed for them whole disc) are the record settings. These can be changed as required for each recording and determine the picture quality and how much space the recording will take up on the disc.

About HDD recording

Recording to the internal hard disk drive (HDD) is basically similar to recording to a VR mode DVD-RW disc. You have the full choice of recording quality options, including the manual mode, and of course you can record, erase and re-record as many times as you like. The capacity of the hard disk drive means that you can store many hours of video on it, even in the higher quality recording modes. To help you organize the contents, the HDD is divided into ten genre. You can name and use these genres as you like—for example, you might have a genre for movies, another for TV shows, and one for camcorder recordings.

Notes for recording

- The maximum number of titles that can be recorded on the HDD is 255.
- Using the HDD allows you to record a maximum of 12 hours continuously.
- You cannot record a radio channel and teletext.
- The recording times shown are not exact because the recorder uses variable bit-rate video compression. This means that the exact recording time will depend on the material being recorded.
- When recording a TV broadcast, if the reception is poor or the picture contains interference, the recording times may be shorter.
- If you record still pictures or audio only, the recording time may be longer.
- The displayed times for recording and time remaining may not always add up to exactly the length of the disc.
- The recording time available may decrease if you heavily edit a disc.
- If using a DVD-RW disc, make sure you change the recording format (Video mode or VR mode) before you record anything on the disc. See page 24 (Disc Format) for how to do this.
- When using a DVD-R or DVD+R disc, you can keep recording until the disc is full, or until you finalize the disc. Before you start a recording session, check the amount of recording time left on the disc.
- When using a DVD-RW disc in Video mode, recording time available will only increase if you erase the last title recorded on the disc.
- The Delete Title option in the Title List (Original) menu only hides the title, it does not actually erase the title from the disc and increase the recording time available (except for the last recorded title on a DVD-RW disc in Video mode).
- When using a DVD+R/RW, the recorder will execute the Menu-making operation to update the new title and editing when removing the disc from the recorder or turn off the recorder. So you must remove the disc after selecting the recorder's operation mode to DVD mode.
- The recordable time of MLP mode with DVD+R DL discs is about 11 hours which is similar to single layer discs, because the resolution of DVD+R DL disc is higher than that of single layer disc.
- Overwrite recording is available using DVD+RW discs.
- In DTV tuner mode, this unit does not record the black screen such as no signal, rating blocked, or scrambled channel, etc.
- During recording, the unit will stop recording automatically if the unrecordable condition continues more than an hour. (for example, no signal, scrambled channel, etc.)